IN THE CLAIMS

Please amend the claims as follows:

1-5. (Canceled)

6. (Previously Presented) A transmitting device that processes radio transmitted signals, comprising:

a frequency conversion means for converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;

a spectrum characteristic processing means for changing an amplitude of the frequency signal while retaining phase information of the frequency signal;

means for reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal;

means for transmitting a signal reconverted into the time sequence signal as a preamble signal for attaining synchronization at a receiver together with a data body; and

modulation processing means for modulating the data body to attain a modulated signal for transmission, wherein the modulated signal is transmitted together with the preamble signal,

wherein the modulation processing means performs an OFDM modulation that applies amplitude and phase modulation to each of a plurality of carriers, applies inverse FFT to the plurality of carriers, and converts the carriers into signals on the time base, while retaining orthogonality of each of the plurality of carriers on the frequency axis, and

the spectrum characteristic processing means sets a spectrum amplitude of an original time sequence signal to a specific value at a center frequency band and end frequency bands of a frequency domain in use, and smoothes the spectrum amplitude at the other frequency bands, in a manner that the spectrum amplitude of the original time sequence signal becomes

equal to that of a general OFDM signal while retaining phase information of the original time sequence signal.

7. (Original) A transmitting device according to Claim 6, wherein the spectrum characteristic processing means nullifies the spectrum amplitude on the center frequency band and end frequency bands.

8. (Currently Amended) A transmitting device that processes radio transmitted signals, comprising:

a frequency conversion means for converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;

a spectrum characteristic processing means for changing an amplitude of the frequency signal while retaining phase information of the frequency signal;

means for reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal; and

a pre-amble pattern storage means for storing [[a]] the signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver, wherein the pre-amble signal read from the pre-amble pattern storage means is transmitted together with a transmitted data body.

9-13. (Canceled)

14. (Previously Presented) A transmitting method performed at a transmitting device that processes radio transmitted signals, comprising:

converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;

changing an amplitude of the frequency signal while retaining phase information of the frequency signal;

reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal;

transmitting a signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver together with the data body; and

modulating, at a modulator, the data body to attain a modulated signal for transmission, wherein the modulated signal is transmitted together with the pre-amble signal,

wherein the modulating includes performing an OFDM modulation that applies amplitude and phase modulation to each of a plurality of carriers, applying inverse FFT to the plurality of carriers, and converting the plurality of carriers into signals on the time base, while retaining the orthogonality of each of the carriers on the frequency axis, and

the changing includes setting a spectrum amplitude of an original time sequence signal to a specific value at a center frequency band and end frequency bands of a frequency domain in use, and smoothing the spectrum amplitude at the other frequency bands, in a manner that the spectrum amplitude of the original time sequence signal becomes equal to that of a general OFDM signal while retaining phase information of the original time sequence signal.

15. (Previously Presented) A transmitting method according to Claim 14, wherein the changing includes nullifying the spectrum amplitude on the center frequency band and end frequency bands.

16. (Previously Presented) A transmitting method performed at a transmitting device that processes radio transmitted signals, comprising:

converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;

changing an amplitude of the frequency signal while retaining phase information of the frequency signal;

reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal; and

storing, at a memory, the signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver, wherein the pre-amble pattern stored in advance is read out and transmitted together with a transmitted data body.

17-18. (Canceled)

19. (New) The transmitting device according to Claim 8, wherein the spectrum characteristic processing means sets a spectrum amplitude of the original time sequence signal to a specific value at a center frequency band and end frequency bands of a frequency domain in use, and smoothes the spectrum amplitude at the other frequency bands, in a manner that the spectrum amplitude of the original time sequence signal becomes equal to that of a general OFDM signal while retaining phase information of the original time sequence signal.

20. (New) The transmitting method according to Claim 16, wherein the changing includes setting a spectrum amplitude of the original time sequence signal to a specific value at a center frequency band and end frequency bands of a frequency domain in use, and smoothing the spectrum amplitude at the other frequency bands, in a manner that the spectrum amplitude of the original time sequence signal becomes equal to that of a general OFDM signal while retaining phase information of the original time sequence signal.